

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A process for ~~increasing the yield in~~ preparing polyhydric alcohols in increased yields comprising ~~obtained by~~ aldolizing formaldehyde with a higher aldehyde in the presence of catalytic amounts of a tertiary amine and hydrogenating the ~~resulting mono- or polymethylolalkanal obtained in this way, especially of dimethylolbutanal to trimethylolpropane, which has the following steps, said process~~ further comprising the steps of:

- a) distillative removal of ~~the~~ components having lower boiling points than the polyhydric alcohol from the crude product of the hydrogenation of the mono- or polymethylolalkanal;
- b) separation of the resulting bottom product in a second distillation stage into a high boiler fraction and a fraction comprising the majority of the polyhydric alcohol;
- c) acid treatment of the high boiler fraction, the water content of the high boiler fraction being from 20% to 90% by weight, based on the total amount of high boiler fraction and water; and
- d) distillation of the fraction comprising the majority of the polyhydric alcohol to remove the more volatile compounds (medium boiler fraction) and recovery of pure polyhydric alcohol;

wherein the acid-treated high boiler fraction is recycled into the hydrogenation of the mono- or polymethylolalkanes to the polyhydric alcohol.

Claim 2 (currently amended): ~~The~~ A process according to ~~as claimed in~~ claim 1, wherein some or all of the medium boiler fraction removed from the fraction comprising the

majority of the polyhydric alcohol by distillation is mixed with the high boiler fraction before the acid treatment.

Claim 3 (currently amended): ~~The~~A process according to claim 1 ~~as claimed in either of claims 1 and 2~~, wherein the acid concentration is from 0.1% by weight to 20% by weight, based on the total amount of high boiler fraction or the mixture of high boiler fraction and middle boiler fraction and water.

Claim 4 (currently amended): ~~The~~A process according to claim 1 ~~as claimed in any of claims 1 to 3~~, wherein the acid is selected from the group consisting of C₁- to C₁₂-carboxylic acids, C₂- to C₁₂-dicarboxylic acids, sulfonic acids, mineral acids, carbon dioxide, sulfur dioxide and acidic ion exchangers.

Claim 5 (currently amended): ~~The~~A process according to claim 1 ~~as claimed in any of claims 1 to 4~~, wherein formic acid is used.

Claim 6 (currently amended): ~~The~~A process according to claim 1 ~~as claimed in any of claims 1 to 5~~, wherein the polyhydric alcohols are selected from the group consisting of trimethylolethane, trimethylolpropane, trimethylolbutane, neopentyl glycol and pentaerythritol.

Claim 7 (currently amended): ~~The~~A process according to claim 1 ~~as claimed in any of claims 1 to 6~~, wherein the polyhydric alcohol is trimethylolpropane.

Claim 8 (new): The process according to claim 2, wherein the acid concentration is from 0.1% by weight to 20% by weight, based on the total amount of high boiler fraction or the mixture of high boiler fraction and middle boiler fraction and water.

Claim 9 (new): The process according to claim 2, wherein the acid is selected from the group consisting of C₁- to C₁₂-carboxylic acids, C₂- to C₁₂-dicarboxylic acids, sulfonic acids, mineral acids, carbon dioxide, sulfur dioxide and acidic ion exchangers.

Claim 10 (new): The process according to claim 3, wherein the acid is selected from the group consisting of C₁- to C₁₂-carboxylic acids, C₂- to C₁₂-dicarboxylic acids, sulfonic acids, mineral acids, carbon dioxide, sulfur dioxide and acidic ion exchangers.

Claim 11 (new): The process according to claim 8, wherein the acid is selected from the group consisting of C₁- to C₁₂-carboxylic acids, C₂- to C₁₂-dicarboxylic acids, sulfonic acids, mineral acids, carbon dioxide, sulfur dioxide and acidic ion exchangers.

Claim 12 (new): The process according to claim 2, wherein formic acid is used.

Claim 13 (new): The process according to claim 2, wherein the polyhydric alcohols are selected from the group consisting of trimethylolethane, trimethylolpropane, trimethylolbutane, neopentyl glycol and pentaerythritol.

Claim 14 (new): The process according to claim 3, wherein the polyhydric alcohols are selected from the group consisting of trimethylolethane, trimethylolpropane, trimethylolbutane, neopentyl glycol and pentaerythritol.

Claim 15 (new): The process according to claim 4, wherein the polyhydric alcohols are selected from the group consisting of trimethylolethane, trimethylolpropane, trimethylolbutane, neopentyl glycol and pentaerythritol.

Claim 16 (new): The process according to claim 5, wherein the polyhydric alcohols are selected from the group consisting of trimethylolethane, trimethylolpropane, trimethylolbutane, neopentyl glycol and pentaerythritol.

Claim 17 (new): The process according to claim 2, wherein the polyhydric alcohol is trimethylolpropane.

Claim 18 (new): The process according to claim 3, wherein the polyhydric alcohol is trimethylolpropane.

Claim 19 (new): The process according to claim 4, wherein the polyhydric alcohol is trimethylolpropane.

Claim 20 (new): The process according to claim 5, wherein the polyhydric alcohol is trimethylolpropane.